

CLAIMS

1. A method of using mobility agents in a telecommunications system, which telecommunications system comprises at least one mobile node supporting the mobile IP and several network elements, of which network elements at least one comprises one or more mobility agents configured to transmit advertising messages to mobile nodes, the method comprising the steps of:

transmitting information on the attributes of one or more network elements in advertising messages from the mobility agents to at least one mobile node, and

using said information in the mobile node in the selection of the serving network element.

2. A method according to claim 1, wherein
said information is transmitted in advertising messages including care-of addresses of the mobility agents periodically and/or at the request of a mobile node.

3. A method according to claim 1 or 2, wherein
attributes of different foreign agents are compared in the mobile node on the basis of said information received from the foreign agents,
the foreign agent that on the basis of its attributes can best take care of data transmission of the mobile node is selected, and
a registration request is transmitted to the selected foreign agent.

4. A method according to claim 3, wherein
said information comprises at least one of the following foreign agent attributes:

current delay of the connection offered by the foreign agent
average delay of the connection offered by the foreign agent
jitter of the connection offered by the foreign agent
number of users served by the foreign agent
throughput of the foreign agent
load of the foreign agent
proportional load of the foreign agent compared to the other foreign agents in the system.

5. A method according to claim 1, wherein the mobile node is wireless and the telecommunications system is wireless and comprises access points which offer a wireless connection to at least one mobile node, said information comprising at least one of the following:

- 5 loads of different access points
- information on the least loaded access point
- information on the recommended access point
- other quality of service parameters of the access points.

- 10 6. A method according to claim 5, wherein
- the attributes of different access points are compared in the mobile node on the basis of said information,
- the access point that on the basis of its attributes and any other criteria, such as radio channel measurements, can best offer a telecommunications connection to the mobile node is selected, and
- 15 a connection is established between the selected access point and the mobile node.

- 20 7. A method of utilizing advertising messages in a telecommunications system, which telecommunications system comprises at least one mobile node and at least one router, the router being configured to transmit advertising messages to mobile nodes, the method comprising the steps of:
- transmitting advertising messages from at least one router to at least one mobile node, the messages including information on the attributes of
- 25 one or more network elements, and
- using said information in the mobile node in the selection of the serving network element.

8. A method according to claim 7, wherein
- said information comprises router attributes, and
- 30 the router to be used is selected in the mobile node on the basis of said information.

9. A method according to claim 7 or 8, wherein the mobile node is wireless and the telecommunications system is wireless and comprises access points which offer a wireless connection to at least one mobile node, said
- 35 information comprising at least one of the following:

- loads of different access points

information on the least loaded access point
information on the recommended access point
other quality of service parameters of the access points.

10. A method according to claim 9, wherein
5 the attributes of different access points are compared in the mobile node on the basis of said information,

the access point that on the basis of its attributes and any other criteria, such as radio channel measurements, can best offer a telecommunications connection to the mobile node is selected, and

10 a connection between the selected access point and the mobile node is established.

11. A network element of a telecommunications system, the network element comprising:

an IP mobility agent functionality configured to transmit advertising
15 messages to mobile nodes in the system,

means for collecting information on the attributes of one or more network elements in the telecommunications system, and

means for transmitting the information in advertising messages to at least one mobile node.

20 12. A network element according to claim 11, wherein the information comprises attributes of a foreign agent and/or attributes of one or more access points of the telecommunications system.

13. A router configured to transmit advertising messages to mobile nodes, the router comprising:

25 means for collecting information on the attributes of one or more network elements of the telecommunications system, and

means for transmitting the information in advertising messages to at least one mobile node.

30 14. A router according to claim 13, wherein the information comprises attributes of the router and/or attributes of one or more access points of the telecommunications system.

15. A mobile node supporting the mobile IP for a telecommunications system, which telecommunications system comprises several network elements, of which at least one comprises one or more mobility agents, said
35 mobile node comprising:

reception means for receiving attribute information on one or more network elements from one or more mobility agents, and

processing means for selecting the serving network element on the basis of said information.

5 16. A mobile node according to claim 15, wherein
said attribute information comprises attributes of the foreign agents,
the processing means are configured to compare attributes of the foreign agents on the basis of said information,

10 the processing means are configured to select the foreign agent
that on the basis of its attributes can best take care of data transmission of the mobile node, and

the processing means are configured to transmit a registration request to the selected foreign agent.

15 17. A mobile node according to claim 15 or 16, wherein
said information comprises attributes of the access points of the telecommunications system,

the processing means are configured to compare the attributes of the access points on the basis of said information received from the mobility agents,

20 the processing means are configured to select the access point that
on the basis of its attributes and any other criteria, such as radio channel measurement, can best offer a telecommunication connection to the mobile node, and

25 the processing means are configured to establish a connection
between the selected access point and the mobile node.

18. An advertising message which is transmitted from a mobility agent of a telecommunications system supporting the mobile IP to a mobile node and which is used for advertising the mobility agent and can be used for transmitting care-of addresses,

30 the message comprising information on the attributes of the mobility agent and/or on the attributes of other network elements belonging to the system.